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**Summary of Unit**

Welcome to the next unit! This unit is called Exploring the World of Algebra. In this unit we are going to learn about linear equation, slope, properties, some key terms, and how to relate them to real life. In this unit we are going to do a variety of products that will allow you to be very creative and interactive with your peers. We will learn to use many new technologies from making a comic in Comic Life, to using Instructables to teach your very own lesson, and much more! The big ideas of the unit are relating mathematics to real life, and creating cool ways to learn about them. There will be no big tests! A lot of the work will be in groups, done in class. I want you to be creative and have fun, we'll make many applications of the math in this unit. I promise this will not be like a normal math class, technology based learning is here, and it is here to stay!!

**Establish Goals**

Common Core State Standards:  
Content Area: Algebra  
Grade Level: High School  
Domain: Creating Equations  
Cluster: Create equations that describe numbers or relationships.  
Standards(s): 1. Create equations and inequalities in one variable and use them to solve problems.  
  
  
**Students will understand that**  
•Linear equations are common and relevant in real life situations.  
•You can create equations in one variable, and inequalities, and use them to solve problems.  
•Using PMDAS (Parentheses, multiplication, division, addition, and subtraction) and other order of operations skills are essential to solving problems.

**Essential Questions**

•How can linear equations be useful in real life?  
  
•How do you solve linear and inequality problems?  
  
•Why are using order of operations essential for successfully solving equations?

**Students will know**

•Vocabulary: Inequalities, integers, constants, variables, slope, irrational numbers, rational numbers, real numbers, and whole numbers.  
•Terminology: Properties, Identities, Solution, Slope.  
•Formulas: Area, y=mx+b, distributive, associative, commutative.

**Students will be able to**

•Demonstrate how to solve linear and inequality problems.  
•Compare answers and collaborate to find the correct answers.  
•Use linear equations in real life situations.  
•Recognize that linear equations are a simple way to figure out real life problems.  
• Critique their order of operation skills to eliminate common mistakes.  
•Be open to suggestions from their peers, to further their own understandings.  
**Performance Task Overview**   
The state of Minnesota is going through an extreme crisis. The I-35 Bridge crossing the Mississippi River has collapsed due to structural issues. The eight-lane bridge provided passage to over 140,000 vehicles daily, including 5,700 commercial vehicles. The I-35 bridge is heavily relied on for everyday transportation. The State of Minnesota Department of Transportation (DOT) have put out a Public Service Request (PSR) for teams of engineers to build a new, and safer bridge. Your job, as highly successful engineers is to create a 3-D bridge proposal using Google SketchUp Technology. We are dealing with the collapse of a huge transport bridge used by thousands of people daily. It is essential to restore the passageway as soon as possible. We must prevent the reoccurrence of this collapse. The Minnesota DOT will be judging all entered proposals, and will choose several possible bridge ideas. They will fly these select few teams to Minnesota to give an eight-ten minute presentation. If you can prove to them that your proposal is their best possible option, you and your team of engineers will be chosen to construct the new and improved bridge! NOTE: The team who is chosen to build this new bridge will receive a large bonus, upon finishing this bridge!!!

**Expectations**

**Absences:** Student participation is very important! Participation will be a big portion of your grade; however I do understand that students will have some off days, and will miss a few classes over the course of the year. Students need to understand that participation is a great way to do really well in this class. I realize that there will be times when you are unable to make it to class. In this case I ask students to do the following: check the website for assignments, email me with questions, ask a friend, and do your best to stay caught up. I encourage students to stop in and visit, during my fee time. This is especially for when you have missed a day of class, regardless of if it's not the regular day we meet.  
**Plagiarism:** All work done by a student must be his/her individual effort. Student should know that I expect honesty in my classroom. Plagiarism will be dealt with according to school policy. The steeling of work, and copying of homework are included in plagiarism. If you have any further questions, please feel free to ask me.  
**Assignments:** Assignments are to be completed to the best of your ability and will be collected at the beginning of class. If there are questions on the homework that you have, then I will gladly answer them for the class. Homework is a HUGE part of the participation grade and won't always be collected, but will be checked at random each week. Doing the homework is your responsibility to practice the material in order to do well.  
**Late Work Policy:** 10 points will be deducted for each day an assignment is late. After five days you will receive half credit, considering your work is completed. If you know you will be away from class, please come see me ahead of time and we will make other arrangements. I realize that students are busy with sports, have appointments, and will be involved in other school related extracurricular activities.  
**Classroom Expectations:** I expect student to be on time, and prepared for class. This means that your homework is completed; you have a pencil, your binder, a calculator, and whatever else you may need for class. NO bullying, or unnecessary class disruptions will be allowed. Feel free to participate in one of these two things and find out your consequence; I can assure you that you will not enjoy it! In the past I have had students clean desks. Do you wish to have this task?!?! (Didn't think so!!!) I also expect students to have a positive attitude, and most importantly HAVE FUN!

**Benchmarks**

**500 Points**  
  
**Wordle:** Students will create a collage of situations where linear equations can be used. There are careers, real life situations, and plenty other examples of places where these equations will be used. Students will apply their collage to real-life applications.**(40 points)**  
  
**Prezi:**- It is time to play a game!! Students will be asked to create a game that involves linear and quadratic equations, slope, and properties. Using a presenting tool called Prezi, students can create a game board. Students are allowed to use additives from other board games as well. Groups will present their Prezis to the class upon completion. **(40 points)**  
  
**Comiclife**: Students will use comic life to create a real life application. They will incorporate linear equations, integers, constants, and variables into their comics. They will be allowed to work with a partner.**(40** **points)**  
  
**Instructables:** Students will create a step by step instruction guide to evaluate area, y=mx+b, and properties. They will compare and contrast their Instructables with other students in the class. The instruction guide will be in terms that most people would be able to understand. Students can use visuals, text, or even a song to make the instructions fun and interesting. The students will work in groups of three in order to create a guide that will be posted online. **(40 points)**  
  
**Quizlet:** Students will be learning the about identity properties and solutions. With this students will be taking notes and brainstorming questions that they believe are more important than other information. A Quizlet is an online quiz that you can create. In groups of two, or three students will create a Quizlet, They will use this technology to ask questions that relate to identities, and solutions. They will have a few required questions given to them, and will also be required to come up with ten of their own. Eventually, each group will take each quiz created by each group. This will allow for extra practice. Note: You will only be graded on your Quizlet creation. This will help students to better understand the concepts because they will have to think of compelling questions that will use the information they have learned. **(40 points)**  
  
**Blogger:** Students will discuss and reflect on questions they may have remaining from class. Students will then post a blog entry using Blogger technology. They will post their questions on Blogger, and attempt to answer their own question using multiple resources. These resources are limitless. The web, parents, textbook, friends, or maybe even another teacher, are good reference ideas. This will be an ongoing project throughout the unit. You will be graded on your participation, and work ethic. **(40 Points)**  
  
**Performance task** - (See performance task overview above) **(150 points)**  
  
**Participation -** This is key. It is more then just calling out answers in my class, it is how you work together and how you work in class. Students will be expected to complete graphic organizers and try to have positive attitudes during cooperative learning stages. The mindfulness of others will play a role in this grade. Students are expected to pay attention and give positive feedback to other students, or groups when presenting projects.**(100 points)**  
  
**Homework -** This class relies on a lot of outside work. We simply do not have the time to complete all work during the class time. So, please, work hard outside of class! Homework will be graded based on your work ethic. I will determine how much effort, and time you put into the assignment, as well as looking for a decent understanding **(50points)**

**Grading Scale**

**A** (93 -100), **A-** (90 - 92), **B+** (87 - 89), **B** (83 - 86), **B-** (80 - 82), **C+**(77 - 79), **C** (73-76), **C-** (70 - 72), **D+**(67 - 69), **D** (63 - 66), **D-** (60 - 62), **F** (0 - 59).